SUBCHAPTER F : LICENSING OF ALTERNATIVE METHODS OF DISPOSAL OF RADIOACTIVE MATERIAL

§§336.501-336.505, 336.512-336.514, 336.521

Effective June 5, 1997

§336.501. Scope and General Provisions.

(a) This subchapter establishes the criteria, terms and conditions under which the commission may issue a license for on-site disposal of radioactive material or waste. Subject to the limitations provided in this subchapter, the commission may issue a new license, or amend or renew an existing license, for the on-site disposal of radioactive material or waste.

(b) Notwithstanding the other provisions of this subchapter, the commission shall not authorize new or additional facilities or the expansion of existing facilities for the on-site disposal of radioactive material or waste except to a public entity specifically authorized by law for radioactive waste disposal. In the case of an existing commission license that authorizes on-site disposal of radioactive material or waste, the commission shall not amend or renew the license to authorize the addition or expansion of disposal facilities.

(c) Any person who owns, operates, controls, or possesses an inactive site on which disposed radioactive material or waste is located and who does not hold a current radioactive material license for the inactive disposal site shall apply for a license by January 1, 1999.

(d) Any person whose possession of disposed radioactive material is authorized by the Texas Department of Health is exempt from the requirements of this subchapter. This subchapter does not apply to persons licensed or subject to licensing under Subchapter G of Chapter 336 of this title (relating to Licensing Requirements for Source Material (Uranium or Thorium) Recovery and Processing Facilities) or Subchapter H of Chapter 336 of this title (relating to Licensing Requirements for Near-Surface Land Disposal of Radioactive Waste). This subchapter also does not apply to sites that meet commission requirements for release for unrestricted use in accordance with the rules of this chapter.

(e) No person authorized to dispose of radioactive material or waste under this subchapter may receive radioactive material or waste for the purpose of disposal from other persons, sources, other facilities owned or operated by the applicant or licensee, or any other off-site locations.

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§336.502. Definitions.

Terms used in this subchapter are defined in §336.2 of this title (relating to Definitions). Additional terms used in this subchapter have the following definitions:

Inactive disposal site - A site or facility that:

(A) contains radioactive material or waste disposed of below the surface, or soils or structures contaminated with radioactive material or waste; and

(B) no longer disposes or will dispose of, or accepts or will accept for the purpose of disposal, additional radioactive material or waste.

On-site - The same or geographically contiguous property that may be divided by public or private rights-of-way, provided the entrance and exit between the properties is at a cross-roads intersection, and access is by crossing, as opposed to going along, the right-of-way. Noncontiguous properties owned by the same person but connected by a right-of-way that the property owner controls and to which the public does not have access, is also considered on-site property.

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§336.503. Filing of Application.

(a) An application for a license, or for renewal or amendment of a license shall contain the information prescribed in §336.512 of this title (relating to Technical Requirements for Inactive Disposal Sites) or §336.513 of this title (relating to Technical Requirements for Active Disposal Sites), as appropriate, and demonstrate how the technical requirements and performance objectives have been met.

(b) As provided in §336.514 of this title (relating to Financial Assurance and Recordkeeping for Decommissioning), an application may be required to include a proposed decommissioning funding plan or a certification of financial assurance for decommissioning.

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§336.504. General Requirements for Issuance of a License.

An application may be approved if the commission determines that the requirements set forth in §336.503 of this title (relating to Filing of Application) have been met and that:

(1) The applicant is qualified by reason of training and experience to conduct the proposed radioactive material disposal activities in accordance with the rules in this chapter in such a manner as to protect and minimize danger to the public health and safety and the environment;

(2) The applicant's proposed equipment, facilities, and procedures are adequate to protect and minimize danger to the public health and safety and the environment;

(3) The issuance of the license will not be inimical to public health and safety nor have a long-term detrimental impact on the environment;

(4) If applicable, the applicant has demonstrated financial capability to conduct the proposed activity, including all costs associated with decommissioning, decontamination, disposal, reclamation, and any long-term care and surveillance; and

(5) The applicant satisfies any applicable special requirements in this subchapter.

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§336.505. Issuance of License.

Upon a determination that an application meets the requirements of the Texas Radiation Control Act and the rules of this chapter, the commission may issue a license authorizing the proposed activity.

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§336.512. Technical Requirements for Inactive Disposal Sites.

(a) Content of license application. An applicant for a license to authorize possession of disposed radioactive material in an inactive disposal site which was formerly used shall submit the following:

(1) the information required by §336.332 of this title (relating to Method of Obtaining Approval of Proposed Disposal Procedures). This information shall include the applicant's evaluation of relevant information which must demonstrate that the disposal site has no undue impact on public health or safety or the environment;

(2) information on the concentration and total activity of each radionuclide disposed of, packaging of the wastes, the characteristics of the disposal site (e.g., geological, hydrological, and topographical), as-built disposal trench or landfill construction, final cover construction, and depth of burial of wastes. This information shall be as complete and accurate as possible based on the full extent of information available to the applicant about the previous disposal activities;

(3) a description of any radiological monitoring performed at the site and the resulting data;

(4) the technical qualifications of personnel responsible for radiation safety functions at the site;

(5) a description of the methods of restricting access to the site (e.g., fencing) and any permanent site markers;

(6) information on land ownership and any covenants on land use imposed by recorded title documents; and

(7) an evaluation of the alternative of decommissioning the site and disposing of the radioactive material at a licensed disposal facility.

(b) Content of application for renewal of license.

(1) An applicant for renewal of a license authorizing possession of disposed radioactive material in an inactive disposal site which was formerly used shall submit information on:

(A) the current conditions of the site (e.g., site stability and any maintenance performed at the site);

(B) any radiological monitoring performed at the site by the licensee and the resulting data;

(C) the methods of restricting access to the site; and

(D) any changes in or additions to the procedures or information contained in previous applications.

(2) The executive director may request additional information, such as that required by subsection (a) of this section, if this information was not previously provided for the site.

(c) Performance objectives. The applicant's submittal shall include sufficient information to enable the executive director to assess the potential hazard to public health and safety and to determine whether the disposal site will have a significant impact on the environment. The executive director shall evaluate existing inactive disposal sites on a case-by-case basis and may consider the following general criteria and performance objectives in making the evaluation:

(1) Radiation exposure and release of radioactive materials from a disposal site shall be maintained as low as is reasonably achievable. Reasonable assurance must be provided that the potential dose to an individual on or near the site will be within acceptable limits. The estimated committed effective dose equivalent resulting from a radiological assessment of a site will usually be the determining factor in the granting of authorization for a disposal site. If the projected dose to a member of the public exceeds a few millirems per year, the executive director may consider other factors in determining whether to grant authorization for the site, including, but not limited to, the use of institutional controls to restrict access for a specified period of time.

(2) The location and characteristics of a site shall be such as to preclude potential offsite migration or transport of radioactive materials or ready access to critical exposure pathways.

(3) The general topography of the disposal site shall be compatible with its use for waste burial. As an example, surface features shall direct surface water drainage away from the disposal site. Wastes must not be buried in locations which, once covered, would tend to collect surface water. The characteristics of the site shall minimize to the extent practicable the potential for erosion and contact of percolating or standing water with wastes.

(4) Water-bearing strata shall be a minimum of 10 feet below the depth at which waste is buried.

(5) Waste shall be emplaced in a manner that minimizes the void spaces between packages and permits the void spaces to be filled.

(6) Void spaces between waste packages shall be filled with earth or other material to reduce future subsidence within the fill.

(7) Cover design shall minimize water infiltration to the extent practicable, direct percolating or surface water away from the disposed waste, and resist degradation by surface geologic processes and biotic activity.

(8) In general, a site authorized under this subchapter shall be located, designed, operated, and closed so that long-term isolation and custodial care for long-term stability would not be required beyond the time the licensee can reasonably be expected to occupy the site. If a site does not meet this objective, requirements for long-term care shall be evaluated.

(9) The location of a disposal site shall be compatible with the uses of surrounding environs (both the applicant's and adjacent properties).

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§336.513. Technical Requirements for Active Disposal Sites.

(a) Content of license application. An applicant for a license to authorize disposal of radioactive material shall submit the following:

(1) the information required by §336.332 of this title (relating to Method of Obtaining Approval of Proposed Disposal Procedures). This information shall include the applicant's evaluation of relevant information which demonstrates that the disposal site has no undue impact on public health or safety or the environment;

(2) an inventory of radionuclides in the wastes to be disposed of and the concentration and total activity of each radionuclide;

(3) the estimated frequency of burials and estimated volume of waste in each burial;

(4) a description of waste packaging;

(5) a description of nonradiological constituents in the waste (e.g., hazardous wastes, heavy metals, absorbents, and chelating agents);

(6) a map of the proposed disposal location, which also shows the applicant's property boundaries and locations of nearby residences, water wells, surface water, previous waste burial sites, etc.;

(7) site characterization, including:

(A) the identification of all soil layers by classification according to American Society for Testing and Materials (ASTM) methods (e.g., sand, gravel, silt, and clay), soil engineering properties, and infiltration and drainage characteristics (e.g., coefficient of permeability according to ASTM D5084);

(B) stratigraphy (geological identification) of the near-surface subsoils;

(C) geologic hazards, including faulting, seismic activity, sink holes, solution depressions, and flooding, including identification of the 100-year floodplain;

(D) hydrological data, including porosity, distribution coefficient, hydraulic conductivity, soils dispersivity, and hydraulic gradient;

(E) groundwater, including use, depth to aquifer, fluctuation, discharge location, and saturated thickness;

(F) water wells in the vicinity, including location, use, depth, and water level;

(G) surface drainages and bodies of water in the vicinity, including locations and use;

(H) meteorological data;

(I) maps, including United States Geological Survey topographic quadrangle, hydrologic, and geologic;

(J) area resources (e.g., local land use, locations of nearby residences, etc.);

(K) site performance history, including erosion, flooding, subsidence, etc; and

(L) a summary of any past disposals and any observed effects;

(8) a description of the proposed design and construction of the waste disposal trench or landfill;

(9) a description of the proposed design and construction of the final cover and of proposed closure procedures;

(10) information on the depth of waste burial and proposed procedures for emplacement of waste;

(11) proposed inspection, maintenance, and stabilization procedures;

(12) the applicant's radiological impact assessment consisting of modeling of radionuclide releases to site-specific critical exposure pathways and the projection of potential radiological doses to an individual on site and to a member of the public off site;

(13) proposed radiation safety procedures during operations and closure;

(14) a description of proposed radiological monitoring of the site;

(15) the organizational structure of the applicant, a description of lines of authority and assignment of responsibilities, and technical qualifications of personnel responsible for radiation safety functions;

(16) information on the applicant's proposed methods of restricting access to the site (e.g., fencing) and proposed permanent site markers;

(17) proposed recordkeeping;

(18) information on land ownership and any covenants or restrictions on land use;

(19) the applicant's justification for the proposed disposal method; and

(20) an evaluation of other disposal alternatives, such as disposal of the radioactive material at a licensed disposal facility.

(b) Content of application for renewal of license.

(1) An applicant for renewal of a license authorizing disposal of radioactive material shall submit information on:

(A) the current status of disposal operations, including the current status of use or closure of disposal trenches or landfills;

(B) as-built construction of disposal trenches or landfills and any final covers;

(C) volumes of radioactive material disposed of to date;

(D) the concentration and total activity of each radionuclide in the waste disposed of;

(E) the frequency of burials;

(F) the results of any radiological monitoring performed at the site; and

(G) any changes in or additions to the procedures or information contained in previous applications.

(2) The executive director may request additional information, such as that required by subsection (a) of this section, if that information was not previously provided for the site.

(c) Performance objectives. The applicant's submittal shall include sufficient information to enable the executive director to assess the potential hazard to public health and safety and to determine whether the disposal site will have a significant impact on the environment. General criteria and performance objectives which the executive director shall apply in the evaluation of a proposed disposal site include the following:

(1) Radiation exposure and release of radioactive materials from a disposal site shall be maintained as low as is reasonably achievable. Reasonable assurance must be provided that the potential dose to an individual on or near the site will be within acceptable limits. The estimated committed effective dose equivalent resulting from a radiological assessment of a site will usually be the determining factor in the

granting of authorization for a disposal site. If the projected dose to a member of the public exceeds a few millirems per year, the executive director may consider other factors in determining whether to grant authorization for the site, including, but not limited to, the use of institutional controls to restrict access for a specified period of time.

(2) The location and characteristics of a site shall preclude potential offsite migration or transport of radioactive materials or ready access to critical exposure pathways.

(3) The general topography of the proposed disposal site must be compatible with the proposed waste burial. As an example, surface features shall direct surface water drainage away from the disposal site. Wastes shall not be buried in locations which, once covered, would tend to collect surface water. The characteristics of the site shall minimize to the extent practicable the potential for erosion and contact of percolating or standing water with wastes.

(4) Water-bearing strata shall be a minimum of 10 feet below the depth at which waste will be buried.

(5) Waste shall be emplaced in a manner that minimizes the void spaces between packages and permits the void spaces to be filled.

(6) Void spaces between waste packages shall be filled with earth or other material to reduce future subsidence within the fill.

(7) Covers shall be designed to minimize water infiltration to the extent practicable, to direct percolating or surface water away from the disposed waste, and to resist degradation by surface geologic processes and biotic activity.

(8) In general, a disposal site for which authorization is requested under this subchapter shall be located, designed, operated, and closed so that long-term isolation and custodial care for long-term stability would not be required beyond the time the licensee can reasonably be expected to occupy the site. If a proposed site does not meet this objective, requirements for long-term care shall be evaluated.

(9) The location of a disposal site shall be such that it is compatible with the uses of surrounding environs (both the applicant's and adjacent properties).

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§336.514. Financial Assurance and Recordkeeping for Decommissioning.

(a) The licensee shall submit a decommissioning funding plan.

(1) Each applicant for a license authorizing the disposal of unsealed radioactive material with a half-life greater than 120 days and in quantities exceeding 10^5 times the applicable quantities set forth in §336.521, Appendix A, of this title (relating to Radionuclide Quantities for Use in Determining Financial Assurance for Decommissioning) shall submit a decommissioning funding plan as described in subsection (e) of this section. The decommissioning funding plan must also be submitted when a combination of isotopes is

involved if R divided by 10^5 is greater than 1 (unity rule), where R is defined as the sum of the ratios of the quantity of each isotope to the applicable value in §336.521, Appendix A of this title.

(2) Notwithstanding the requirement of paragraph (1) of this subsection, each applicant for a license authorizing the disposal of more than 100 millicuries of source material in a readily dispersible form, except for activities licensed under Subchapter G of Chapter 336 of this title (relating to Licensing Requirements for Source Material (Uranium or Thorium) Recovery and Processing Facilities), shall submit a decommissioning funding plan as described in subsection (e) of this section.

(b) Each applicant shall submit a decommissioning funding plan or a certification that financial assurance for decommissioning has been provided.

(1) Each applicant for a license authorizing disposal of radioactive material with a half-life greater than 120 days and in quantities specified in subsection (d) of this section shall either:

(A) submit a decommissioning funding plan as described in subsection (e) of this section; or

(B) submit a certification that financial assurance for decommissioning has been provided in the amount prescribed by subsection (d) of this section using one of the methods described in Subchapter I of Chapter 336 of this title (relating to Financial Assurance). For an applicant, this certification may state that the appropriate assurance shall be obtained after the application has been approved and the license issued but before the disposal of licensed material. If the applicant defers execution of the financial instrument until after the license has been issued, a signed original of the financial instrument obtained to satisfy the requirements of Subchapter I of Chapter 336 of this title must be submitted to the executive director before disposal of licensed material. If the applicant does not defer execution of the financial instrument, the applicant shall submit to the executive director, as part of the certification, a signed original of the financial instrument obtained to satisfy the requirements of Subchapter I of Chapter 336 of this title.

(2) Notwithstanding the requirement of paragraph (1) of this subsection, each applicant for a license authorizing the disposal of quantities of source material greater than 10 millicuries but less than or equal to 100 millicuries in a readily dispersible form, except for activities licensed under Subchapter G of Chapter 336 of this title, shall either:

(A) submit a decommissioning funding plan as described in subsection (e) of this section; or

(B) submit a certification that financial assurance for decommissioning has been provided in the amount of $150,000 using one of the methods described in Subchapter I of Chapter 336 of this title. For an applicant, this certification may state that the appropriate assurance shall be obtained after the application has been approved and the license issued but before the disposal of licensed material. If the applicant defers execution of the financial instrument until after the license has been issued, a signed original of the financial instrument obtained to satisfy the requirements of Subchapter I of Chapter 336 of this title must be submitted to the executive director before disposal of licensed material. If the applicant does not defer execution of the financial instrument, the applicant shall submit to the executive director as part of the

certification, a signed original of the financial instrument obtained to satisfy the requirements of Subchapter I of Chapter 336 of this title.

(c) Each holder of a license shall provide financial assurance for decommissioning, a decommissioning funding plan, or a certification of financial assurance.

(1) Each holder of a license issued on or after January 1, 1998, which is of a type described in subsection (a) or (b) of this section, shall provide financial assurance for decommissioning in accordance with the criteria set forth in this subchapter and Subchapter I of Chapter 336 of this title.

(2) Each holder of a license issued before January 1, 1998, and of a type described in subsection (a) of this section shall submit, on or before January 1, 1998, a decommissioning funding plan, as described in subsection (e) of this section, or a certification of financial assurance for decommissioning in an amount at least equal to $750,000, in accordance with the criteria set forth in this subchapter and Subchapter I of Chapter 336 of this title. If the licensee submits the certification of financial assurance rather than a decommissioning funding plan, the licensee shall include a decommissioning funding plan in any application for license renewal.

(3) Each holder of a license issued before January 1, 1998, and of a type described in subsection (b) of this section shall submit, on or before January 1, 1998, a decommissioning funding plan, as described in subsection (e) of this section, or a certification of financial assurance for decommissioning, in accordance with the criteria set forth in this subchapter and Subchapter I of Chapter 336 of this title.

(4) Any licensee who has submitted an application before January 1, 1998, for renewal of a license shall provide financial assurance for decommissioning in accordance with subsections (a) and (b) of this section. This assurance must be submitted on or before January 1, 1998.

(5) Each licensee shall comply with the requirements of §336.217 of this title (relating to Expiration and Termination of Licenses and Decommissioning of Sites and Separate Buildings or Outdoor Areas), as applicable.

(d) The amount of financial assurance for decommissioning required under subsection (b)(1) of this section is based on the quantity of material as follows:

(1) $750,000--greater than 10^4 but less than or equal to 10^5 times the applicable quantities in §336.521, Appendix A, of this title, in unsealed form. (For a combination of isotopes, if R, as defined in subsection (a) of this section, divided by 10^4 is greater than 1 but R divided by 10^5 is less than or equal to 1.)

(2) $150,000--greater than 10^3 but less than or equal to 10^4 times the applicable quantities in §336.521, Appendix A, of this title in unsealed form. (For a combination of isotopes, if R, as defined in subsection (a) of this title divided by 10^3 is greater than 1 but R divided by 10^4 is less than or equal to 1.)

(e) Each decommissioning funding plan must contain a cost estimate for decommissioning and a description of the method of assuring funds for decommissioning from Subchapter I of Chapter 336 of this title, including means for adjusting cost estimates and associated funding levels periodically over the life of the facility. The decommissioning funding plan must also contain a certification by the licensee that financial

assurance for decommissioning has been provided in the amount of the cost estimate for decommissioning and a signed original of the financial instrument obtained to satisfy the requirements of Subchapter I of Chapter 336 of this title.

(f) Each person licensed under this subchapter shall keep records of information important to the safe and effective decommissioning of the facility in an identified location until the license is terminated by the commission. If records of relevant information are kept for other purposes, reference to these records and their locations may be used. Information important to decommissioning consists of:

(1) records of spills or other unusual occurrences involving the spread of contamination in and around the disposal facility, equipment, or site. These records may be limited to instances when contamination remains after any cleanup procedures or when there is reasonable likelihood that contaminants may have spread to inaccessible areas, as in the case of possible seepage into porous materials such as concrete. These records must include any known information on identification of involved nuclides, quantities, forms, and concentrations.

(2) as-built drawings and modifications of structures and equipment in restricted areas where radioactive materials are disposed of and of locations of possible inaccessible contamination (e.g., buried pipes) that may be subject to contamination. If required drawings are referenced, each relevant document need not be indexed individually. If drawings are not available, the licensee shall substitute appropriate records of available information concerning these areas and locations.

(3) except for areas containing only radioactive materials having half-lives of less than 65 days, a list contained in a single document and updated every two years of the following:

(A) all areas designated as restricted areas, as defined in §336.2 of this title (relating to Definitions), and all areas formerly designated as restricted areas under rules in effect before January 1, 1994;

(B) all areas outside of restricted areas that require documentation under paragraph (1) of this subsection;

(C) all areas outside of restricted areas where current and previous wastes have been buried as documented under §336.348 of this title (relating to Records of Waste Disposal); and

(D) all areas outside of restricted areas which contain material such that, if the license expired, the licensee must be required to either decontaminate the area to unrestricted release levels or apply for approval for disposal under §336.332 of this title (relating to Method of Obtaining Approval of Proposed Disposal Procedures).

(4) records of the cost estimate performed for the decommissioning funding plan or of the amount certified for decommissioning, and records of the funding method used for assuring funds if either a funding plan or certification is used.

Radioactive Material	Microcuries

§336.521. Appendix A. Radionuclide Quantities for Use in Determining Financial Assurance for Decommissioning.

Radionuclide Quantities
for Use in Determining Financial
Assurance for Decommissioning

Radioactive Material	Microcuries
Americium-241	0.01
Antimony-122	100
Antimony-124	10
Antimony-125	10
Arsenic-73	100
Arsenic-74	10
Arsenic-76	10
Arsenic-77	100
Barium-131	10
Barium-133	10
Barium-140	10
Bismuth-210	1
Bromine-82	10
Cadmium-109	10
Cadmium-115m	10
Cadmium-115	100
Calcium-45	10
Calcium-47	10
Carbon-14	100
Cerium-141	100
Cerium-143	100
Cerium-144	1
Cesium-131	1,000
Cesium-134m	100
Cesium-134	1
Cesium-135	10
Cesium-136	10
Cesium-137	10
Chlorine-36	10
Chlorine-38	10
Chromium-51	1,000
Cobalt-58m	10
Cobalt-58	10
Cobalt-60	1

Radioactive Material	Microcuries
Copper-64	100
Dysprosium-165	10
Dysprosium-166	100
Erbium-169	100
Erbium-171	100
Europium-152 (9.2 hr)	100
Europium-152 (13 yr)	1
Europium-154	1
Europium-155	10
Fluorine-18	1,000
Gadolinium-153	10
Gadolinium-159	100
Gallium-72	10
Germanium-71	100
Gold-198	100
Gold-199	100
Hafnium-181	10
Holmium-166	100
Hydrogen-3	1,000
Indium-113m	100
Indium-114m	10
Indium-115m	100
Indium-115	10
Iodine-125	1
Iodine-126	1
Iodine-129	0.1
Iodine-131	1
Iodine-132	10
Iodine-133	1
Iodine-134	10
Iodine-135	10
Iridium-192	10
Iridium-194	100
Iron-55	100
Iron-59	10
Krypton-85	100
Krypton-87	10
Lanthanum-140	10
Lutetium-177	100
Manganese-52	10
Manganese-54	10
Manganese-56	10
Mercury-197m	100
Mercury-197	100

Radioactive Material	Microcuries
Mercury-203	10
Molybdenum-99	100
Neodymium-147	100
Neodymium-149	100
Nickel-59	100
Nickel-63	10
Nickel-65	100
Niobium-93m	10
Niobium-95	10
Niobium-97	10
Osmium-185	10
Osmium-191m	100
Osmium-191	100
Osmium-193	100
Palladium-103	100
Palladium-109	100
Phosphorus-32	10
Platinum-191	100
Platinum-193m	100
Platinum-193	100
Platinum-197m	100
Platinum-197	100
Plutonium-239	0.01
Polonium-210	0.01
Potassium-42	10
Praseodymium-142	100
Praseodymium-143	100
Promethium-147	10
Promethium-149	10
Radium-226	0.01
Rhenium-186	100
Rhenium-188	100
Rhodium-103m	100
Rhodium-105	100
Rubidium-86	10
Rubidium-87	10
Ruthenium-97	100
Ruthenium-103	10
Ruthenium-105	10
Ruthenium-106	1
Samarium-151	10
Samarium-153	100
Scandium-46	10
Scandium-47	100

Radioactive Material	Microcuries
Scandium-48	10
Selenium-75	10
Silicon-31	100
Silver-105	10
Silver-110m	1
Silver-111	100
Sodium-24	10
Strontium-85	10
Strontium-89	1
Strontium-90	0.1
Strontium-91	10
Strontium-92	10
Sulfur-35	100
Tantalum-182	10
Technetium-96	10
Technetium-97m	100
Technetium-97	100
Technetium-99m	100
Technetium-99	10
Tellurium-125m	10
Tellurium-127m	10
Tellurium-127	100
Tellurium-129m	10
Tellurium-129	100
Tellurium-131m	10
Tellurium-132	10
Terbium-160	10
Thallium-200	100
Thallium-201	100
Thallium-202	100
Thallium-204	10
Thorium (natural)[1]	100
Thulium-170	10
Thulium-171	10
Tin-113	10
Tin-125	10
Tungsten-181	10
Tungsten-185	10
Tungsten-187	100
Uranium (natural)[2]	100
Uranium-233	0.01
Uranium-234, uranium-235	0.01
Vanadium-48	10
Xenon-131m	1,000

Radioactive Material	Microcuries
Xenon-133	100
Xenon-135	100
Ytterbium-175	100
Yttrium-90	10
Yttrium-91	10
Yttrium-92	100
Yttrium-93	100
Zinc-65	10
Zinc-69m	100
Zinc-69	1,000
Zirconium-93	10
Zirconium-95	10
Zirconium-97	10
Any alpha-emitting radionuclide not listed above or mixtures of alpha emitters of unknown composition	0.01
Any radionuclide other than alpha-emitting radionuclides not listed above or mixtures of beta emitters of unknown composition	0.1

Notes:
1. Based on alpha disintegration rate of thorium-232, thorium-230, and their daughter products.

2. Based on alpha disintegration rate of uranium-238, uranium-234, and uranium-235.

Adopted May 14, 1997 Effective June 5, 1997